Application No. 09/890,672 Amdt. Date July 28, 2003 Reply to Official Action of March 26, 2003

## **Amendments to the Claims**

The listing of the claims will replace all prior versions, and listings, of claims in this application:

## **Listing of Claims:**

- 1. (Currently Amended) A liquid dishwashing detergent composition suitable for use in hand dishwashing, said composition comprising characterized by:
- (a) a low molecular weight organic diamine having a pK1 and a pK2, wherein the pK1 and the pK2 of said diamine are both in the range of from 8.0 to 11.5;
  - (b) an anionic surfactant;
  - (c) an amphoteric surfactant; and
- (d) a solvent selected from the group consisting of a diol, a polymeric glycol and mixtures thereof wherein said diol is selected from the group consisting of:

OH 
$$R_7$$
 OH  $H_2C$ — $(--C$ — $)_n$ — $C$ — $R_8$   $R_7$  H

wherein n = 0- 3,  $R_7 = H$ , methyl or ethyl; and  $R_8 = H$ , methyl, ethyl, propyl, isopropyl, butyl and isoubutyl isobutyl; and wherein the polymeric glycol is selected from the group consisting of:

$$(PO)_x (EO)_y H$$

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wherein PO represents a propylene oxide group and EO represents an ethylene oxide group and x+y is from 17 to 68, and x/(x+y) is from 0.25 to 1.0; and

wherein the pH (as measured as 10% aqueous solution) is from 5.0 to 12.5 and wherein the mole ratio of said anionic surfactant to said amphoteric surfactant to said diamine is from 100:40:1 to 9:0.5:1.

- 2. (Currently Amended) A liquid dishwashing detergent composition according to Claim 1 further comprising characterized by a buffering agent and wherein the composition has a pH of from 10 to 11.5.
- 3. (Previously Amended) A liquid dishwashing detergent composition according to Claim 2 wherein the diol is selected from the group consisting of propylene glycol, 1,2 hexandiol, 2-ethyl-1,3-hexandiol and 2,2,4-trimethyl-1,3-pentanediol and mixtures thereof.
- 4. (Previously Amended) A liquid dishwashing detergent composition according to Claim 3 wherein the polymeric glycol is polypropylene glycol having a molecular weight of from 1000 to 5000.
  - 5. (Previously Amended) A liquid dishwashing detergent composition according to Claim 4 wherein said diamine is selected from the group consisting of:

$$R_2$$
  $C_X$   $A$   $C_V$   $R_4$   $R_5$ 

wherein  $R_{2-5}$  are independently selected from H, methyl, ethyl, and ethylene oxides;  $C_x$  and  $C_v$  are independently selected from methylene groups or branched alkyl groups where x+v is from 3 to 6; and A is optionally present and is selected from electron donating or withdrawing moieties chosen to adjust the diamine pKa's to the desired range; wherein if A is present, then both x and y must be 2 or greater.

4

9116-716

- 6. (Previously Amended) A liquid dishwashing detergent composition according to Claim 5 wherein the polymeric glycol is polypropylene glycol having a molecular weight of from 2000 to 4000 and is present in a range of from 0.25% to 5.0%, by weight of the composition.
- 7. (Currently Amended) A liquid dishwashing detergent composition according to Claim 6 further comprising characterized by a polymeric suds stabilizer selected from the group consisting of:
  - (i) homopolymers of (N,N-dialkylamino)alkyl acrylate esters having the formula:

$$\begin{array}{c|c}
R^1 \\
R \\
N-(CH_2)_{n}-O \\
\end{array}$$

wherein each R is independently hydrogen,  $C_1$ - $C_8$  alkyl, and mixtures thereof,  $R^1$  is hydrogen,  $C_1$ - $C_6$  alkyl, and mixtures thereof, n is from 2 to 6; and

(ii) copolymers of (i) and

wherein R<sup>1</sup> is hydrogen, C1-C6 alkyl, and mixtures thereof; provided that the ratio of (ii) to (i) is from 2 to 1 to 1 to 2; and wherein said polymeric suds stabilizer has a molecular weight of from 1,000 to 2,000,000 daltons.

8. (Currently Amended) The liquid dishwashing detergent composition according to Claim 7 further comprising eharacterized by an α-amylases having a specific

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activity at least 25% higher than the specific activity of Termamyl® at a temperature range of 25°C to 55°C and at a pH value in the range of 8 to 10, measured by the Phadebas® α amylase activity assay.

- 9. (Currently Amended) A method for cleaning a substrate in a manual dishwashing operation comprising characterized by the steps of:
- (a) contacting the substrate with a liquid dishwashing detergent composition prepared according to claim 1; and
- (b) allowing the detergent composition to remain in contact with the substrate for a sufficient time to provide effective cleaning benefits to the substrate.
- 10. (Previously Amended) A method according to Claim 9, wherein the liquid dishwashing detergent composition is applied to the substrate with no more than 90% dilution with water.
- 11. (New) The liquid dishwashing composition according to Claim 1, wherein the solvent is a diol and wherein the diol is selected from the group of:



$$\begin{array}{cccc} \text{OH} & R_7 & \text{OH} \\ I & I & I \\ H_2C - (-C - )_n - C - R_8 \\ & I & I \\ R_7 & H \end{array}$$

wherein n = 0-3,  $R_7 = H$ , methyl or ethyl; and  $R_8 = H$ , methyl, ethyl, propyl, isopropyl, butyl and isobutyl.

12. (New) The liquid dishwashing composition according to Claim 1, wherein the polymeric glycol is polypropylene glycol.

- 13. (New) The liquid dishwashing composition according to Claim 1, wherein the composition comprises from about 0.1% to about 20% by weight of composition of amphoteric surfactant.
- 14. (New) The liquid dishwashing composition according to Claim 1, wherein the composition comprises from about 5% to about 50% by weight of composition of anionic surfactant.
- 15. (New) The liquid dishwashing composition according to Claim 1, wherein the composition comprises from about 0.1% to about 5% by weight of composition of diamine, which has a molecular weight of less than or equal to 400 g/mol.
- 16. (New) The liquid dishwashing composition according to Claim 1, wherein the composition comprises from about 0.5% to about 25.0% by weight of composition of solvent.
- 17. (New) A liquid dishwashing detergent composition suitable for use in hand dishwashing, said composition comprising:
- (a) from 0.1% to about 5% by weight of a low molecular weight organic diamine having a molecular weight of less than or equal to 400g/mol and a pK1 and a pK2, wherein the pK1 and pK2 of said diamines are both in the range of from 8.0 to 11.5;
  - (b) from about 5% to about 50% by weight of an anionic surfactant;
  - (c) from about 0.1% to about 20% by weight of an amphoteric surfactant; and
  - (d) from about 0.50% to about 25.0% by weight of a polypropylene glycol solvent.

7

9116-716